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09/2013

LANCOM
Systems

■ connecting your business

PRODUCTOVERVIEW

- Network Connectivity
- Wireless LAN

LANCOM
Systems

Experience in networking

More than fifteen years of experience backup our know-how in networking and network security. The knowledge and the skills we have gained have made LANCOM into a quality brand for network components. Professional users who value stable and secure network operations have wisely placed their trust in LANCOM Systems. Investments in networking infrastructure should provide capacity for future expansion and technological innovation. For this reason, LANCOM devices are conceptualized to offer a wealth of functions and the potential for upgrading; all of that with an optimal price-performance ratio.

LANCOM – Quality Made in Germany

Our products are designed to meet the specific needs of the European markets, which is supported by the fact that LANCOM products are developed and manufactured primarily in Germany. The operating system LCOS (LANCOM Operating System) is a proprietary development based on open standards. This gives our customers the assurance that specialized requirements and upgrades can be integrated quickly. Similarly, even those customers with older devices continue to benefit from regular free software updates. This demonstrates just how hard we are working to protect our customers' investments and how much we value the security of their networks.

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1781 series:
The right model for your company

The LANCOM 1781 series of routers is the right solution even for complex scenarios. This high-performance series of routers enables professional Internet access for small and midsize companies, branch offices, and home offices.

Gigabit Routing Performance
Due to the support of hardware NAT the routers LANCOM 1781EF+, 1781VA, and 1781VAW achieve Gigabit routing performance of up to 930 Mbps. Hence they provide strong power reserves even when they are extended by software options.

Vectoring-ready!
The next generation of VDSL has been initiated. With the upgrade to VDSL2, also known as VDSL2 Vectoring, data rates have been doubled. The high-performance VDSL routers LANCOM 1781VA and 1781VAW are Vectoring-ready, even today.

The right model for any connection
This 1781 series of business routers is compatible with ADSL connections based on Annex A / B / J / M, or VDSL. Models for fiber optic cables, broadband connections via 3G/4G networks or, with the aid of an external cable modem, VDSL, and SDSL connections also provide maximum flexibility.

IPv6
IPv6 stands for Internet Protocol version 6 and is the successive standard of IPv4. The business routers of the 1781 series support both address standards (dual stack).

Next-generation 3G/4G networking
The LANCOM 1781 series business routers backup your primary connection by means of the cellular network, either with the aid of a USB modem or by selecting a model with an integrated 4G or HSPA+ modem.

More security for VPN connections
The powerful routers of the LANCOM 1781 series feature a real-time clock and a hardware random-number generator to guarantee maximum VPN security and extensive support of digital-certificate.

Power-saving Gigabit Ethernet
The integrated Ethernet switch enables high data rates and energy efficiency based on IEEE 802.3az: Inactive ports are switched off automatically.

	LANCOM 1781EF+	LANCOM 1781VA	NEW LANCOM 1781VAW	LANCOM 1781A	LANCOM 1781AW	LANCOM 1781EW	LANCOM 1781A-3G	LANCOM 1781A-4G	LANCOM 1781-4G
DSL modem	ext. connection optional	integrated VDSL2/ADSL2+	integrated VDSL2/ADSL2+	integrated ADSL2+	integrated ADSL2+	ext. connect. optional	integrated ADSL2+	integrated ADSL2+	ext. connection optional
3G/4G	via USB	via USB	via USB	via USB	via USB	via USB	integrated (up to HSPA+)	integrated (up to LTE)	integrated (up to LTE)
WLAN	–	–	802.11a/b/g/n	–	802.11a/b/g/n	802.11a/b/g/n	–	–	–
Ethernet	5 GE ports + SFP	4 GE ports	4 GE ports	4 GE ports	4 GE ports	5 GE ports	4 GE ports	4 GE ports	4 GE ports
Gigabit routing	yes	yes	yes	–	–	–	–	–	–
Application	high data volumes	branch office connectivity	branch office connectivity	branch office connectivity	branch office connectivity	small and home offices	business-critical connections	business-critical connections	sites without DSL
Application	CE, FCC	CE	Wi-Fi, CE	CE	Wi-Fi, CE, FCC	Wi-Fi, CE	CE, FCC	CE	CE

Connecting your business

LANCOM business routers of the 800, 1600, and 1700 series offer professional and secure Internet access for small and midsized application scenarios. The VPN-capable models additionally allow the secure inter-networking of multiple sites.

The following applies to all models:

- Comprehensive IPv6 support with professional firewall for IPv4 and IPv6 with stateful inspection, intrusion detection and denial-of-service protection
- FAX capabilities at every workstation via LANCAPI, and CAPI Fax Modem support (only for models with an ISDN interface)
- Optional content filter to block unwanted Internet content (58 categories, e.g. for protection of minors, productivity, security)

LANCOM 1780EW-4G – the "mobile conference room" with LTE
Easy, secure access to company networks via WLAN from any location – thanks to LTE cellular networking and VPN, the LANCOM 1780EW-4G offers wireless VPN connectivity with up to 100 Mbps.

- High-speed Internet access as a true alternative to DSL broadband
- WLAN based on IEEE 802.11n with up to 450 Mbps and Gigabit Ethernet port
- Secure wireless access to company networks via VPN with IPSec over HTTPS – suitable for all cellular networks

LANCOM 1780EW-3G – WLAN router with 3G modem
- High datarates even without DSL broadband access with integrated HSPA+ modem
- Dual Band WLAN based on 802.11n and Gigabit Ethernet port
- Secure wireless access to company networks via VPN with IPSec over HTTPS – suitable for all cellular networks

LANCOM 1631E – entry-level router with VPN
- For external DSL or cable modems
- 4-port Gigabit Ethernet switch with power saving functions (IEEE 802.3az)
- VPN site-to-site connectivity with 3 simultaneous IPSec VPN channels
- Network virtualization for 2 networks (ARF)
- Stateful inspection firewall with intrusion detection and denial-of-service protection
- High availability with optional 3G/4G backup via USB
- ISDN remote maintenance, backup, and fax services

LANCOM 831A – ADSL Internet access
- Suitable for all ADSL connections
- Energy-saving 4-port Gigabit Ethernet switch
- Load balancing with up to 2 WAN connections
- Stateful inspection firewall with intrusion detection and denial-of-service protection
- High availability with optional cellular backup via USB
- ISDN remote maintenance, backup, and fax services

Industrial and outdoor 3G routers

Stand-alone, solar-powered video surveillance via webcam, the supply of WLAN hotspots in locations without DSL, or VPN-secured mobile data communications for emergency vehicles and public transport: The LANCOM 3G routers with VPN are the optimal choice in all such situations.

LANCOM IAP-3G

3G VPN router for harsh indoor environments

- Integrated HSPA+ module, data rates up to 21 Mbps
- GPS for device positioning
- IPSec VPN with integrated firewall
- Robust full-metal housing
- Temperature range -20 to +50°C
- 10 - 28V DC universal power adapter
- Suitable for pole, wall, or top-hat rail mounting
- Anti-theft protection by securing the device to the mounting plate
- Vibration-proof based on EN 61373

LANCOM IAP-321-3G

3G VPN router with WLAN for harsh indoor environments

- Like the LANCOM IAP-3G with additional WLAN based on IEEE 802.11a/b/g/n
- Optional hotspot functionality

LANCOM OAP-3G

Outdoor 3G router for extreme conditions

- Like the IAP-3G, however:
- IP66 weatherproof outdoor housing
- Extended temperature range of -33°C to +70°C
- 230 V power supply via optional OAP-320 PSU

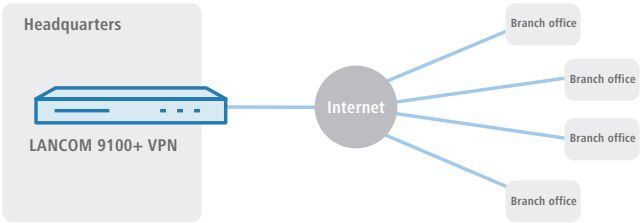
LANCOM OAP-321-3G

Outdoor 3G VPN router with WLAN

- Like the LANCOM OAP-3G with additional WLAN based on IEEE 802.11a/b/g/n
- Optional hotspot functionality

Central Site VPN Gateways

More and more companies are using encrypted Internet connections to handle business-critical applications operating at multiple sites. LANCOM central site gateways support the implementation of large multi-service IP network structures that offer security, high performance, and utmost reliability.



NEW

LANCOM 9100+ VPN

Central site VPN gateway for large-scale VPN projects

- VPN gateway with 200 VPN channels, optionally upgradable to 500 or 1,000
- 4 x Gigabit Ethernet interfaces
- Integrated AES/3-DES hardware accelerator
- Network virtualization with up to 256 VLAN / IP contexts (ARF)
- TACACS+ management
- Dynamic routing and comprehensive redundancy functions

NEW

LANCOM 7100+ VPN

Central site VPN gateway for midsize to large-scale VPN projects

- Like the LANCOM 9100+ VPN, however featuring 100 VPN channels, optionally upgradable to 200

Software Options

The LANCOM software options* upgrade your LANCOM routers, central site gateways, access points, and WLAN controllers. These cost-effective software upgrades give your existing devices entirely new functions – exactly according to your needs!

LANCOM WLC Basic Option
- Upgrades LANCOM routers with WLAN controller functions
- Management of up to 6 access points or WLAN routers
- Option extendable for up to 12 WLAN devices with the LANCOM WLC AP +6 Option
- Simple integration of WLAN management solutions into new or existing network environments

LANCOM WLC Upgrade Option
- Increases the number of access points and WLAN routers managed by the controller
- Available as +6, +10, +25, +100, and +500 Option

LANCOM VPN Option
- Upgrades the number of available VPN tunnels
- Available as VPN-25, VPN-200, VPN-500, and VPN-1000 Option

LANCOM Fax Gateway Option
- Professional reception and transmission of faxes
- Ideal for server virtualization, migration, and backup
- Available for the LANCOM 1781 series (2 faxes simultaneously)

* Options vary per product, please refer to the list of options in the annex.

LANCOM Content Filter

Private surfing at the workplace is a very costly factor to the economy. In order to prevent misuse of your network, LANCOM provides the Content Filter Option to be installed in a router, a WLAN controller or a central site VPN gateway. The filter blocks access to undesirable websites which may contain pornographic, illegal or other undesired contents.

LANCOM Content Filter
- Category-based analysing of webpages
- Time- and profile-based configuration
- Additive licenses for 10, 25 or 100 concurrent users

The Content Filter from LANCOM Systems provides companies with a solution that offers obvious advantages:

Protection of business integrity due to
- Increased employee productivity
- Blockage of undesirable/illegal Internet content
- Minimization of corporate liability risk

Network integrity due to protection against
- Inappropriate use of bandwidth and storage capacity
- Spyware, phishing, viruses, etc.

Flexible hotspot solutions with the LANCOM Public Spot Option

Whether on the train, at work, in the restaurant or on their holiday – modern people like to use WLAN hotspots to get information or contact family and friends spontaneously. With the LANCOM Public Spot Option you provide your guests a comfortable hotspot – with maximum design options for a multitude of scenarios.

LANCOM Public Spot Option – more comfort for your guests:

- In addition to the authentication via username and password: Comfortable self-authentication to the hotspot via SMS or e-mail
- Multi-login – simultaneously online with several end devices
- Quickly connected with the automatic re-login – after an initial authentication, the hotspot stores the relevant client information so that there is no need for an additional manual entering of login credentials

LANCOM Public Spot Option

- Flexibly configurable login procedures of WLAN hotspots
- Comprehensive design options regarding the time of use or validity period of the guest access
- Voucher layout can be individually adapted to the corporate design
- Secure separation of guest and internal corporate network
- Connection to external servers via XML or RADIUS interface
- Suitable for LANCOM routers, central site VPN gateways, access points, and WLAN controllers
- Available in two variants: Public Spot Option and Public Spot XL Option

The hotpot solution by LANCOM – individual as your needs!

A hotspot solution is convincing if it is configurable effortlessly, guests get an easy access to the Internet, and the hotspot provider is ensured that his own network and his guest network are securely separated. The user-friendly wizard helps setting up a secure hotspot solution.

LANCOM Public Spot PMS Accounting Plus Option

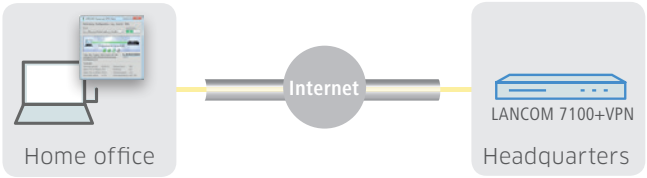
- Combines your hotspot solution with the hotel's Property Management System (PMS)
- Simple and automatic authentication for guests
- Internet fees can be charged to the room bill
- Suitable for PMS with FIAS interface, such as Micros Fidelio
- Operates with many LANCOM Public Spot features
- LANCOM Public Spot Option is required in addition

Hotspot 2.0 – The next hotspot generation

WLAN as simple as cellular networking! The new WLAN standard IEEE 802.11u (Hotspot 2.0) allows for a seamless finding and selection of the right WLAN. Authentication methods using SIM card information, certificates or username and password, enable an automatic, encrypted login to WLAN hotspots of roaming partners – without the need to manually enter login credentials!

VPN Software Client

Even while traveling or at their home office, employees can securely dial-in to the corporate network at any time: The LANCOM Advanced VPN Client provides secure, convenient data communication via WLAN and hotspots, and with 3G/4G modem cards.



LANCOM Advanced VPN Client

The LANCOM Advanced VPN Client provides dial-in access to a company intranet from any location. The only requirement is Internet access via notebook, in hotels via wireless LAN, from any public WLAN hotspot, or with a 3G/4G modem card when you are on the road.

- Secure, encrypted corporate network access whilst traveling
- Integrated stateful inspection firewall
- Supports all IPSec protocol extensions
- Available for current Windows 32/64-bit systems and the MAC OS X operating system

Other functions

- Integrated Installation Wizard and "1-Click VPN"
- Automatic control of internal 3G cards*
- Roaming cost control via budget manager*
- Integrated WLAN configuration
- Seamless roaming – VPN connection remains intact despite brief interruptions, and even during a media change from WLAN hotspot to 3G/4G.*
- IPv6 firewall*
- Supports high-speed LTE cellular modem cards*
- IPv6 support as of version 3.0*

* These features are only supported by the Windows version

LANCOM App World

"Bring Your Own Device" is routine for many modern enterprises. With the growing importance of smartphones and tablet PCs in everyday business, the demands on their applications and their connectivity are also increasing.

LANCOM myVPN

- Highly secure, mobile VPNs made easy:
- Handles the complex VPN configuration of the VPN client integrated into iOS* devices and of the LANCOM router
- Secure access to corporate e-mails, data, and calendars
- LANCOM myVPN user management and automatic detection of myVPN-enabled LANCOM gateways

* iOS, iPad, and iPhone are trademarks of Apple Inc., registered in the U.S. and other countries

LANCOM Product Guide

- LANCOM products and solutions at a glance
- Automatic update and offline functions
- LANCOM news channels
- Project management

Always up to date – visit LANCOM on the Internet

Use the World Wide Web for daily news about LANCOM Systems. With our website, the LANCOM newsletters, Twitter, Facebook, LinkedIn, and Youtube you are provided different channels to be up to date.

All information around LANCOM Systems
Inform yourself about the entire portfolio, breaking news, innovative solutions for different applications, the latest technologies, and much more.
www.lancom.eu

Stay informed – before anyone else
Sign up for our monthly newsletter on our website and use this great way to stay informed about our new products, upcoming events, and exciting news about LANCOM Systems before anyone else.
www.lancom.de/en/newsletter-registration

Twitter and Facebook – get news as it happens!
Don't miss the most important stories. On Twitter or Facebook you have the possibility to get the latest news about everything we care about as well as interesting insights into our daily doing.
www.twitter.com/lancom_intl
www.facebook.com/lancomsystemsINTL

Come and join us on LinkedIn!
Here is the place to share expertise and brilliant ideas about LANCOM Systems. Get connected with your international business partners and LANCOM experts.
www.linkedin.com/company/lancom-systems-gmbh

Watch us on Youtube
On Youtube you will find all interesting LANCOM videos with information about the latest technologies.
www.youtube.com/user/LancomSystems

Hardware Accessories

The comprehensive range of LANCOM accessories helps you to customize your LANCOM product. The full range of accessories for your device is presented in the product comparison at the back of this brochure.

LANCOM Rack Mount Adapter
- Suitable for all LANCOM devices with indoor housing
- Suitable for front or rear device mountings

LANCOM Serial Adapter Kit
- For "COM-port forwarding" via TCP (RS-232/serial-to-IP conversion)
- For device management via the serial interface
- Connection of external analog or GSM modems (D-Sub 9/D-Sub25) via the serial interface

LANCOM SFP-SX-LC1 / SFP-LX-LC1 / SFP-SX-LC2 / SFP-SX-LC10
- SFP modules for usage of high-speed fiber connections with 1 - 10 Gbps of LANCOM devices
- Available standards: 1000Base-LX, 1000Base-SX, and 10GBase-SX
- Full duplex operation
- Hot pluggable

Gigabit Ethernet Switches

Gigabit-Ethernet switches from LANCOM are fully compatible to all LANCOM routers and access points. They are integrated into the LANCOM Management System, offering extensive security and QoS functions, and are ideal for implementing virtualized networks.

For all LANCOM switches with 10 or more ports:

- 5-year warranty on all components
- Port-based access control based on IEEE 802.1X (Single, Multi, Port-based, MAC-based) on all ports
- Port-based QoS, 802.1p or TOS/DiffServ
- High quality, low-noise fan (if fitted)
- Suitable LANCOM SFP moduls available

EEE – Energy Efficient Ethernet
Latest generation LANCOM Gigabit Ethernet switches provide comprehensive power-saving mechanisms of the latest standard (IEEE 802.3az).

Silent fan, long life
LANCOM switches – if fitted – use quiet fans, which make them ideal for office environments. Due to their longevity they feature LANCOM's customary high quality.

IPv6 ready
All LANCOM switches support mixed IPv4 / IPv6 networks. Devices of the 2300 series even use native IPv6 for device management.

Security and management at the highest level
The LANCOM managed switches of the 2300 series offer an exhaustive range of security and management features – such as IEEE 802.1X, SSH/SSL, and TACACS+.

	LANCOM GS-2352	LANCOM GS-2326	NEW LANCOM GS-2326P	LANCOM GS-1224	LANCOM GS-1108	NEW LANCOM GS-1108P
Ethernet ports	48 x Gigabit Ethernet + 4 x 10 GE SFP+	24 x Gigabit Ethernet + 2 x SFP	24 x Gigabit Ethernet + 2 x SFP (GE/SFP)	20 x Gigabit Ethernet + 4 Combo-Ports (GE/SFP)	8 x Gigabit Ethernet	8 x Gigabit Ethernet
Type	Fully managed L2 switch	Fully managed L2 switch	Fully managed L2 switch	Websmart L2 switch	Unmanaged L2 switch	Unmanaged L2 switch
Special characteristics	IPv6 + IPv4 dual stack, 4 x 10 Gigabit uplink, EEE	IPv6 + IPv4 dual stack, EEE	IPv6 + IPv4 dual stack, EEE	fanless, optimal price/performance ratio	fanless	optimal price/performance ratio
Power over Ethernet	–	–	yes, based on IEEE 802.3af/at	–	–	yes, based on IEEE 802.3af/at
Features and protocols	VLAN, LACP, QoS, 802.1X, SSL/SSH, SNMPv3, TACACS+, and many more	VLAN, LACP, QoS, 802.1X, SSL/SSH, SNMPv3, TACACS+, and many more	VLAN, LACP, QoS, 802.1X, SSL/SSH, SNMPv3, TACACS+, and many more	VLAN, LACP, QoS, 802.1X, SNMPv2	–	–
Positioning/ recommended application	Floor switch, branch-office equipment, remotely managed	Floor switch, branch-office equipment, remotely managed	Supply of PoE devices, floor switch, remotely managed	Economical standard switch	Small office, desktop	Supply of PoE devices, small office, desktop
Compliance	FCC CE	FCC CE	FCC CE	FCC CE	FCC CE	FCC CE

NEW High-security Networking

The reporting about cyber espionage has placed special emphasis on the topic data security in public debates. The security of the deployed routers is of maximum priority. The LANCOM CC portfolio provides cross-site networks and critical infrastructures certified security against eavesdropping, manipulation, and sabotage.

On the safe side

The LANCOM CC portfolio provides highly secure VPN site-connectivity based on highly integrated, field-proven LANCOM network components for high demands for security. All LANCOM products – CC-certified or not – provide maximum security, which is significantly higher than the general level in the market. The certification by the German Federal Office for Information Security (BSI) confirms this high-security with an independent, highly demanding testing based on the strict Common Criteria (CC) policies.

Complete scope of functionalities and interfaces:

- VPN site-connectivity
- Backup and redundancy
- Routing
- Support of digital certificates
- Network virtualization
- Management

What are the Common Criteria?

- Internationally recognized standard for the certification of hardware and software with regard to data security
- There are 7 Evaluation Assurance Levels (EAL)
- These EAL represent the extent and depth of an evaluation
- EAL 4+ is the highest internationally recognized certification a commercial network product of this complexity can achieve

Certified high-security firmware

LCOS 8.70 CC is a special security version of the LANCOM firmware LCOS, particularly developed for LANCOM CC routers, enabling an operation compliant with Common Criteria security standards. The firmware is hardened and only functions classified as highly secure are available in certified CC mode.

LCOS 8.70 CC
[LANCOM OPERATING SYSTEM]

High-security operations:

LANCOM CC products are ideal for an operation in all areas where the exchange of highly sensitive data plays a role.

- Public administrations
- Financial services
- Commercial enterprises with elevated demands for security
- Industrial plants
- Critical infrastructures

Fields of application:

- Highly secure site-to-site connectivity
- Protection of critical subareas, e.g. management board offices or R&D departments
- High-security access to secure cloud services
- Protection of IP telephony and videoconferencing solutions (tap-proof encryption)

For further information on the topic "High-security Networking" please visit the website **www.lancom.de/en/high-security**

Certified High-security

The LANCOM CC portfolio has been awarded by the German Federal Office for Information Security as a trustworthy and secure IT infrastructure based on Common Criteria EAL 4+. This officially recognized quality seal guarantees independently tested security according to the high standards of the Common Criteria.

LANCOM 1781EF (CC)
- High-performance VPN router with Gigabit Ethernet, SFP port
- Gigabit switch based on IEEE 802.3az and Gigabit SFP port for fiber (FTTx)

LANCOM 1781A (CC)
- High-performance VPN router with ADSL2+ modem

LANCOM 1781A-3G (CC)
- High-performance VPN router with ADSL2+ and 3G modem

LANCOM 1781A-4G (CC)
- High-performance VPN router with ADSL2+ and 4G/LTE modem

LANCOM 1781-4G (CC)
- High-performance VPN router with integrated 4G/LTE modem

The following applies to all CC models:
- 5 simultaneous IPSec VPN tunnels (optionally 25)
- Network virtualization with up to 16 networks on one device (ARF)
- Powerful firewall with Intrusion Detection and Denial of Service Protection

Benefits of LANCOM CC products

- Highly secure VPN site-connectivity based on highly integrated, field-proven network components
- Comprehensive scope of interfaces and functionalities
- Certified protection against cyber attacks
- Guaranteed free of backdoors
- Development and manufacturing of all products 'Made in Germany'

LANCOM 9100+ VPN (CC)
- Central site VPN gateway for a highly secure connection of up to 1,000 sites
- Incl. 200 VPN channels, upgradable to up to 1,000
- Advanced Routing & Forwarding with 256 VLAN/IP contexts
- 4 x Gigabit Ethernet
- Routing performance with up to 990 Mbps and VPN throughput (AES) with up to 580 Mbps

LANCOM 7100+ VPN (CC)
- Central site VPN gateway for a highly secure connection of up to 200 sites
- Incl. 100 VPN channels, upgradable to up to 200
- Advanced Routing & Forwarding with 256 VLAN/IP contexts
- 4 x Gigabit Ethernet
- Routing performance with up to 790 Mbps and VPN throughput (AES) with up to 430 Mbps

LANCOM CC Start-up Kit
- For a certified start-up of LANCOM CC products according to CC EAL 4+
- Scope of delivery: Card reader for reading out contactless smart cards (BSI-certified), serial configuration cable, USB-to-Serial adapter, and contactless smart card (BSI-certified)

LANCOM L-4xx Indoor Access Points Series

Smart, fast, and innovative – the LANCOM L-4xx series of access points for intelligent high-performance WLAN structures are ideal for modern enterprise environments. Demands for maximum performance and range are more than satisfied by these professional access points.

Smart. Fast. Innovative.

- WLAN optimization with Band Steering* and Spectral Scan
- Maximum throughput at WLAN peripheries
- Certification by the Wi-Fi Alliance
- IPv6 Ready Gold certification for the full support of IPv4 and IPv6 dual stack
- Versatile power source due to 802.3af Power over Ethernet

LANCOM L-460agn dual Wireless

Dual-radio access point in an elegant housing for high-speed WLAN in exclusive premises

- Modern design with an elegant housing and integrated antennas
- Parallel operation at 2.4 and 5 GHz for heterogeneous client environments
- Spectral Scan for troubleshooting WLAN operations
- Optimized network load at 2.4 GHz due to Band Steering
- Improved signal coverage and range with 3x3 MIMO technology

LANCOM L-452agn dual Wireless

Dual-radio access point for high-speed WLAN in modern enterprise environments

- Parallel operation at 2.4 and 5 GHz for heterogeneous client environments
- Spectral Scan for troubleshooting WLAN operations
- Optimized network load at 2.4 GHz due to Band Steering
- Improved signal coverage and range with 3x3 MIMO technology

LANCOM L-451agn Wireless

Single-radio access point for intelligent high-speed WLAN

- Operates optionally at 2.4 or 5 GHz
- Spectral Scan for troubleshooting of WLAN operations
- Improved signal coverage and range with 3x3 MIMO technology

Band Steering*

Automatically controlled by the access point, clients steered to the 5 GHz frequency band can effectively double the WLAN performance.

Spectral Scan

LANCOM Spectral Scan is a professional tool for an efficient WLAN troubleshooting. By scanning the entire radio frequency spectrum, non-WLAN sources of interference can be identified and graphically illustrated.

Performance

WLAN has become a true alternative to wired networks with net data rates of more than 430 Mbps (TCP) for the LANCOM L-460agn dual Wireless and LANCOM L-452agn dual Wireless, and 230 Mbps (TCP) for the LANCOM L-451agn Wireless.

* Band Steering is available for all current LANCOM dual-radio access points

Wireless LAN Indoor Access Points

The intelligent wireless LAN solutions from LANCOM are easy to install and have an extensive range of security mechanisms. LANCOM also offers access points for operations in harsh environments or public areas. These are equipped with metal housings and anti-theft mechanisms. There are also models with integrated antennas for unobtrusive installations.

LANCOM L-322agn dual Wireless

Dual radio access point with WLAN based on IEEE 802.11a/b/g/n

- Simultaneous operation at 2.4 and 5 GHz
- 1 x Gigabit and 1 x Fast Ethernet port
- Connection of external antennas optional

LANCOM L-321agn Wireless

Single radio access point with WLAN based on IEEE 802.11a/b/g/n

- Operation at 2.4 or 5 GHz
- Gigabit Ethernet connector
- Connection of external antennas optional

LANCOM L-320agn Wireless

Single radio access point with WLAN based on IEEE 802.11a/b/g/n

- Operation at 2.4 or 5 GHz
- Gigabit Ethernet connector
- Integrated antennas
- Available in the housing colors “classic” and “white”

LANCOM L-320agn Wireless

All LANCOM indoor access points offer:

- Security functions such as 802.11i (WPA2) / 802.1X
- Detection of rogue WLAN stations during operation
- Operation in stand-alone mode or with LANCOM WLAN controllers
- VLAN and Multi-SSID for virtualized networks
- Versatile power source due to 802.3af Power over Ethernet
- Optionally available: LANCOM Public Spot Option

NEW

LANCOM IAP-322

Dual radio access point with WLAN based on IEEE 802.11a/b/g/n

- Robust, dust-proof full metal housing (temperature range -20 to +50°C)
- Four external antennas for a parallel radio operation at 2.4 and 5 GHz
- PoE connectors for Gigabit Ethernet and Fast Ethernet
- Power supply via 12V power supply unit, multi power supply or Power over Ethernet based on IEEE 802.3af

LANCOM IAP-321

Single radio access point with WLAN based on IEEE 802.11a/b/g/n

- Robust, dust-proof full metal housing (temperature range -20 to +50°C)
- Power supply via 12V power supply unit, multi power supply or Power over Ethernet based on IEEE 802.3af
- Gigabit Ethernet port
- Vibration-proof based on EN 61373

LANCOM L-54g Wireless

54/108 Mbps access point

- Operation in the 2.4 GHz frequency band
- Fast Ethernet port
- Connection of external antennas optional

LANCOM Wall Mount

Wall mounting for all LANCOM indoor access points and routers with plastic housings

- Devices are easily mounted by latching them into the wall mount
- Theft-protection due to padlock
- **NEW:** Available colors: “classic” and “white”

Wireless LAN Controllers

Who would not wish for an even more secure WLAN infrastructure and greater efficiency in its administration? Make this a reality by operating a WLAN controller for the central management of WLAN network infrastructures. The WLAN controllers are suitable for all LANCOM access points and WLAN routers.

LANCOM WLC-4100

- Centralized management for 100 access points and WLAN routers (upgradable for up to 1,000 APs)
- Highest operational reliability without “single-point-of-failure”
- Optional upgrade with hotspot functionality

LANCOM WLC-4025+

- Centralized management for 25 access points and WLAN routers (upgradable for up to 100 APs)
- Highest operational reliability without “single-point-of-failure”
- Optional upgrade with hotspot functionality

LANCOM WLC-4006+

- Centralized management for 6 access points and WLAN routers (upgradable for up to 30 WLAN devices)
- Integrated hotspot functionality

What functions do LANCOM WLAN controllers offer?

- Automatic discovery & commissioning of WLAN devices
- Automatic WLAN RF optimization
- Central management of users and devices
- Switchable data break-out: Directly at the access point, separated by VLAN, or central to the WLAN controller via a “Layer-3 tunnel”

Hardware features	LANCOM WLC-4006+	LANCOM WLC-4025+	LANCOM WLC-4100
Model			
LAN / WAN connection	5 x Gigabit Ethernet	4 x Gigabit Ethernet	4 x Gigabit Ethernet
Hardware encryption accelerator for CAPWAP/TLS and IPSec	■	■	■

Functions			
Number of managed LANCOM access points and WLAN routers	6 (upgradeable to max. 30)	25 (upgradeable to max. 100)	100 (upgradeable to max. 1,000)
Integrated IPSec gateway	5 channels	5 channels	5 channels
Advanced Routing & Forwarding	Up to 16 VLAN / IP contexts	Up to 64 VLAN / IP contexts	Up to 64 VLAN / IP contexts
Layer-3 tunneling	■	■	■
WLAN RF optimization	■	■	■
Redundancy, controller backup, and load balancing	■	■	■
Integrated RADIUS server	■	■	■
Public Spot function & voucher printing	■	Optional	Optional
Content Filter	Optional	Optional	Optional
Item no.	62035 62036 (UK)	61378 61379 (UK) 61384 (US)	61369 61377 (UK) 61387 (US)

Wireless LAN Outdoor Access Points

As a quick way of inter-connecting buildings, for point-to-point links over several kilometers, an outdoor WLAN hotspot, or a high-speed “last mile” broadband connection – for these and similar applications, LANCOM has a comprehensive portfolio of WLAN solutions with professional 2.4 and 5 GHz WLAN access points, outdoor antennas, and a wide range of accessories.

All LANCOM outdoor access points offer:

- VLAN, multi-SSIDs and optional hotspot functionality
- Extended temperature range
- Robust, weather-resistant outdoor housing (IP-66)
- Wide range of mounting accessories supplied as standard
- Ideal accessories: Antennas, cables, surge arrestors

LANCOM OAP-382

Dual radio outdoor access point with WLAN based on IEEE 802.11a/b/g/n fiber connector for highest demands for performance

- IP66 housing with heating and cooling
- 4 external antennas for a parallel operation at 2.4 and 5 GHz
- 1 x Gigabit Ethernet connector
- Outdoor SFP port for galvanic isolation for data transmission over large distances

NEW

LANCOM OAP-322

Dual radio outdoor access point with WLAN based onIEEE 802.11a/b/g/n for professional applications in the open

- 4 external antennas for a parallel operation at 2.4 and 5 GHz
- Connectors for Gigabit Ethernet with Power over Ethernet based on IEEE 802.3af and Fast Ethernet
- Connectors for external power supply for 10 - 28V
- Robust IP66 protective housing (-33°C to 70°C)

LANCOM OAP-321

Single radio outdoor access point with WLAN based on IEEE 802.11a/b/g/n with integrated antenna

- 1 x 300 Mbps 802.11agn (either 2,4 or 5 GHz)
- Integrated 5 GHz MIMO antenna, up to 17 dBi gain
- Robust IP66 protective housing (-33°C to 70°C)
- Also available as “Bridge Kit”

LANCOM OAP-380 PSU

- Optional outdoor power-supply unit for LANCOM OAP-382
- 230V AC / 48V DC
- 15 meter cable length

LANCOM OAP-320 PSU

- Outdoor power supply unit for LANCOM OAP-3G and LANCOM OAP-321-3G
- 230V AC / 48V DC
- 15 meter cable length

LANCOM OAP-380 Fiber Kit

- Fiber-optic module for LANCOM OAP-382
- Available in 15 meter lengths

LANCOM OAP-380 Power Cable

- Power cable for LANCOM OAP-382
- Available in 15 meter lengths

AirLancer Extender SA-5L

- For application between an external antenna and an access point/WLAN router as a central component for surge protection
- Low signal attenuation
- N jack/N plug

AirLancer Extender SA-LAN

- Symmetrical surge arrestor for Ethernet cable
- PoE compatible

LANCOM GE PoE Injector

- 1-port PoE Injector, IEEE 802.3af
- Gigabit Ethernet

External Antennas

LANCOM Systems offers a comprehensive portfolio of indoor and outdoor wireless LAN antennas for the 2.4 and 5 GHz frequency bands, as well as antennas for UMTS/3G and LTE/4G mobile routers. Each antenna is supplied with a kit that includes cabels and mounting materials. Necessary adapters are included in the scope of delivery or are available as LANCOM accessories.

300 Mbps outdoor WLAN antennas

AirLancer Extender O-D80g
- 8.5 dBi sector antenna for 2.4 GHz, polarization diversity

AirLancer Extender O-D60a
- 10 dBi sector antenna for 5 GHz, polarization diversity

AirLancer Extender O-D9a
- 23 dBi directional antenna for 5 GHz, polarization diversity

50 – 150 Mbps outdoor WLAN antennas

AirLancer Extender O-360ag
- 360° omnidirectional antenna for 2.4 GHz and 5GHz bands with 6dBi or 7dBi gain

AirLancer Extender O-70
- 8.5 dBi sector antenna for 2.4 GHz

AirLancer Extender O-30
- 14 dBi directional antenna for 2.4 GHz

AirLancer Extender O-18a
- 18 dBi directional antenna for 5 GHz

AirLancer Extender O-9a
- 23 dBi directional antenna for 5 GHz

Accessories

AirLancer USB-300agn
- Wireless IEEE 802.11n USB adapter
- Dualband (2.4 / 5 GHz)

The right antennas for any application

- Omnidirectional antennas:
  360° coverage, sufficient for shorter ranges
- Sector antennas:
  Higher power focusing for longer ranges
- Directional antennas:
  Strongest form of focusing for ranges over several kilometers

WLAN indoor antennas

AirLancer Extender I-D180agn
- MIMO antenna for ceiling mounting, for 2.4 GHz and 5 GHz, 300/450 Mbps

AirLancer Extender I-180
- Indoor antenna for ceiling mounting
- 2.4 GHz with 4 dBi antenna gain

AirLancer Extender I-60ag
- Indoor dualband antenna for 2.4 GHz and 5 GHz
- 6 dBi (for 2.4 GHz) and 8 dBi (for 5 GHz)

UMTS/3G and LTE antennas

AirLancer Extender I-360-4G
- Omnidirectional indoor multiband LTE antenna, fully backwards compatible

AirLancer Extender O-360-4G
- Omnidirectional outdoor multiband LTE antenna, fully backwards compatible

AirLancer Extender I-360-3G
- Omnidirectional indoor antenna for HSPA, UMTS/3G, EDGE, and GPRS

AirLancer Extender O-360-3G
- Omnidirectional outdoor antenna for HSPA, UMTS/3G, EDGE, and GPRS

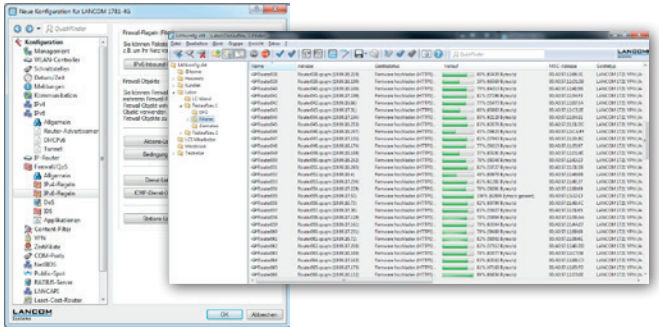
Antenna cables

AirLancer cable NJ-NP
- N-plug to N-jack cable (3m / 6m or 9m)
- Suitable for all LANCOM OAPs

AirLancer cable NP-NP
- Connects external AirLancer antennas to LANCOM OAP-321 series / OAP-382 series

LCMS – LANCOM Management System

LANCOM customers do not just buy a product – they receive an all-round solution. An important part of this package is LCMS, the free LANCOM Management System, our software for management and real-time monitoring of all LANCOM routers, access points, and wireless LAN controllers.



LANconfig

From the easy commissioning of a single device with setup wizards to the comprehensive management of large-scale installations – LANconfig has a wide spectrum of applications:

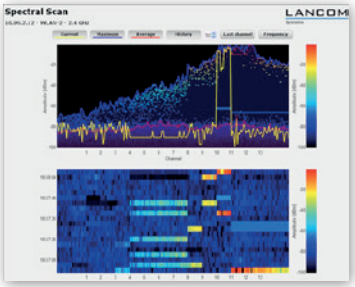
- Automatic detection of new devices
- All-round Setup Wizards
- Remote configuration over IP or ISDN
- Integrated configuration via Telnet, SSH and HTTPS
- Context-sensitive help system
- Graphical trace module for recordings and troubleshooting
- QuickFinder, the quick way to find devices, parameters and settings
- High-performance IPv4 and IPv6 firewall, including rule configuration
- QuickLinks for intuitive user guidance through complex structures

Central management for groups of devices:

- Central distribution of firmwares and scripts
- Simultaneous configuration of multiple devices
- Logging of all actions
- Freely definable group configuration profiles
- Device import by .csv and automatic config creation
- Export function for importing devices into LANCOM Large Scale Monitor

A professional solution for any demanding application:

- Comprehensive, user-friendly set for managing LANCOM products
- Simple configuration and monitoring
- High usability with intuitive design
- Simultaneous management of multiple devices



LANmonitor

LANmonitor is the ideal program for a convenient and structured monitoring of networks. SNMP-trap controlled, it offers nearly real-time monitoring of all connections and device statuses.

Basic functions of LANmonitor:

- Connection and interface status display
- Transfer rates, protocols, and IP addresses
- Display of software version, CPU load, and memory usage
- Logging of online times and transfer volumes
- Firewall event display and device syslog
- Logging of device activity to a file
- Graphical trace module for recordings and troubleshooting
- Spectral Scan to identify sources of interference in the WLAN*

WLANmonitor

LANCOM WLANmonitor can centrally monitor the status of a wireless network (WLAN). It presents information about the entire network in general and detailed information about individual access points and clients.

LANCOM WLANmonitor offers the following security functions:

- Status monitoring of access points in the network
- Clear display of all clients, access points, and WLAN controllers
- Rogue AP/client detection

* Spectral Scan is available for LANCOM access points of the 4xx and 32x series.

LANCOM Large Scale Monitor

The LANCOM Large Scale Monitor (LSM) is a professional tool for monitoring medium-sized to large-scale networks with large numbers of network components. With LANCOM LSM you have your network under control!

Advantages of LANCOM Large Scale Monitor:

- Professional network operations
- Clearly structured display of WLAN infrastructures and VPN connections – also on floorplans
- Individual configuration options for each user
- Sustainable reduction of IT operating costs

LANCOM LSM – Large Scale Monitor

Powerful monitoring and surveillance system for mid-sized and large-scale networks.

- Scalable monitoring from 25 or more devices (upgradeable to more than 1,000)
- Browser-based solution also supports smartphones
- Adjustable triggers for alerts and notifications, incl. parent/child relationships
- Graphic display of floorplans with active status information
- Grouping of devices into configurable folder structures or topologies
- Users, roles, and rights management; change logs

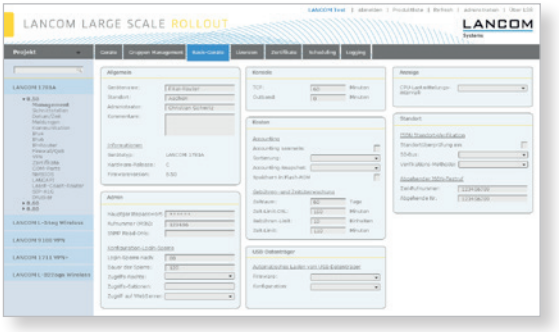
Comprehensive monitoring:

- Monitoring of all LANCOM routers, access points, and switches
- Easy integration of printers and servers
- Access to the WEBconfig on any LANCOM device
- Monitoring and display of VPN connections
- Seamless roaming history of WLAN clients at LANCOM access points, even for complex client movements

NEW LANCOM Large Scale Rollout & Management

Professionalize your network management!

LANCOM Large Scale Rollout & Management is a powerful system for the configuration and management of medium-sized to very large networks with 100 to several thousand LANCOM network components. It offers you a central place for mastering the demands of large corporate networks.



LANCOM LSR – Large Scale Rollout & Management
Powerful system for rollout- and change management of medium-sized to very large networks

- Rollout: Commissioning of entire network structures and new devices
- Mass or group updates of firmwares and configurations
- Time-controlled execution of individual functions
- Grouping of devices into configurable folder structures
- Location-independent, browser-based solution
- Users, roles, and rights management; change logs

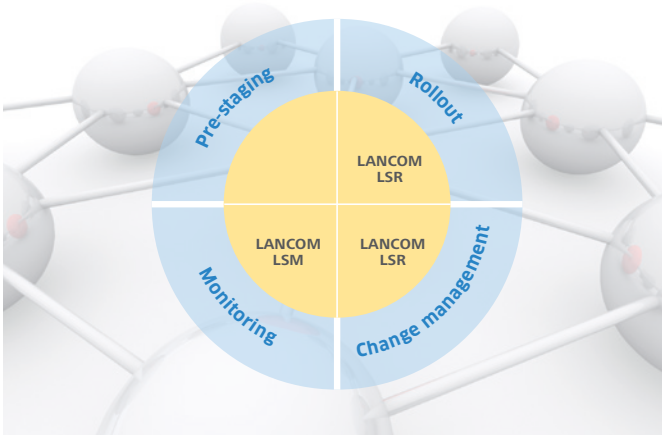
Advantages of LANCOM LSR:

- Sustainable, efficient network management
- Proactive error management
- Central management of complex networks
- Freedom of location due to browser-based solution
- Individual configuration options for each user
- Sustainable reduction of IT operating

Central management
LANCOM LSR is installed once on a dedicated server or as a VMware appliance. The system is browser-based and can thus be operated location-independently.

Rollout management
- User-friendly commissioning of large-scale network installations
- Automatic notification of new devices
- Immediate configuration rollout, also time-controlled
- Inclusion into the ongoing central change management

Change management
- Configuration of single, multiple, or all devices
- Consistent and comprehensive setup of device groups
- Automatic rollout of firmware updates and configuration changes in push or pull mode
- Time-delayed rollout of temporarily unavailable devices
- User-related history of all activities (change logs)



On-site Workshops / Consulting Days

Our LANCOM trainers are coming to you! You can book our LANCOM experts for on-site workshops and training courses at your location. Benefit from both our technical expertise as well as from the convenience of personalized on-site training.

Workshops on our product range

- No need to travel
- No traveling or accomodation costs
- Individual appointments
- Individual combination of topics

Our LANCOM trainers are coming to you.

On-site workshops
We arrange our workshops (with certification by request*) at your location. As usual we combine theoretical with practical parts and also bring the technical equipment.

With the right training tailored for your needs, we will make you a LANCOM expert for your network.

* To be taken online

Consulting Day
These contents are available for your Consulting Day:

- Setup and optimization of your configuration, setup of configuration templates
- Implementation of a rollout
- Interconnectivity between branch offices and the central site via VPN
- Central access point management via WLAN controller (WLC)
- Embedding layer 3 tunneling into the existing infrastructure

Consulting and booking
We will gladly consult you and make you an offer that fits your needs!
Contact us via **+49 2405 49 93 6-220** or **training@lancom.eu**

Support – we stay by your side!

Products and solutions are only as good as the service that backs them up. This is why consulting and support play a central role at LANCOM.

Support in countries outside of Germany is available directly from LANCOM distribution partners and specialist resellers:
www.lancom.eu/en/how-to-buy.

Also visit our international support webpage under **www.lancom.eu/support**.

LANCOM KnowledgeBase

- A full text search will find any documents with relevant terms.

LANCOM Partner Support

As a LANCOM partner you enjoy exclusive benefits – including our support.
The LANvantage partner program offers you the following:

- Preferential support – depending on your partner status
- Dedicated phone number and e-mail address
- Access to extended support hours (for LANCOM Solution Partners)

Reseller Partner LANCOM Systems

Solution Partner LANCOM Systems

For more information on our LANvantage partner program see **www.lanvantage.eu**.

Your all-inclusive package:

- Expert advice by telephone
- Our support form at www.lancom.eu/en/service-support/support/support-form
- Tailor-made support upgrades
- A wide range of services

LANCOM Extended Services (to purchase)

- **LANCOM Config Service Remote / On-site**
  LANCOM experts support you in the design of solution scenarios, the creation of configurations, or with installations – by phone or on site.
- **LANCOM Emergency Support**
  Just in case. If you suddenly need immediate help, e.g. if your infrastructure fails – we guarantee response times in a matter of 30 minutes until diagnosis.
- **LANCOM Extended Support Times**
  Book qualified LANCOM employees to be on-call outside of business hours, e.g. for planned changes such as configuration updates, LCOS updates, etc.
- **LANCOM Support Flat Rates**
  Dedicated phone number and e-mail address with a guaranteed NBD response time (for installations with up to 20/50/100 LANCOM devices or combinations)

LANCOM Service and Warranty Extensions

- **LANCOM Next Business Day Service Extension**
  Advance replacement of a defective LANCOM device the next business day (Monday to Friday, islands excepted)
- **LANCOM Advanced Replacement**
  Next-day device replacement. In the case of hardware failure, LANCOM will send you a replacement device by the next business day (Monday to Friday)
- **LANCOM 2-Year Warranty Extension**
  Extension of the manufacturer warranty by further 2 years

All mentioned services apply to DE / AT / UK / IRL / ES / FR / IT / BE / NL / LUX